# Computer Science

Books and Journals from Cambridge University Press

Cambridge publish in a number of areas of Computer Science including artificial intelligence, programming languages, robotics and the application of mathematics to computer science

For further details visit: cambridge.org/core-computer-science



Cambridge **Core**  Access leading journals in your subject

# Cambridge Core

Explore today at cambridge.org/core

Cambridge Core



#### SUBSCRIPTIONS

Natural Language Engineering (ISSN 1351-3249; electronic 1469-8110) is published six times a year in January, March, May, July, September and November. Six parts form a volume. The subscription price (excluding VAT and sales tax) of volume 23 (2017) (which includes postage) is £368 net (US\$601 in the USA, Canada and Mexico) for institutions print and electronic, institutions electronic only £305/\$502; £43 net (US\$71 in the USA, Canada and Mexico) for individuals ordering direct from the publisher and certifying that the journal is for their personal use. Single parts are £68 (US\$114 in the USA, Canada and Mexico) plus postage.

Orders, which must be accompanied by payment, may be sent to a bookseller, subscription agent or direct to the publisher: Cambridge University Press, Journals Fulfillment Department, UPH, Shaftesbury Road, Cambridge CB2 8BS, UK; or in the USA, Canada and Mexico: Cambridge University Press, Journals Fulfillment Department, 1 Liberty Plaza, Floor 20, New York, NY 10006, USA. EU subscribers who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniya Company Ltd, PO Box 55, Chitose, Tokyo 156, Japan.

#### COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of U.S. Copyright law) subject to payment to C.C.C. of the per-copy fee of \$16.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 1351-3249/2015. *ISI Tear Sheet Service*, 3501 Market Street, Philadelphia, PA 19104, USA, is authorised to supply single copies of

separate articles for private use only.

Organisations authorised by the Copyright Licensing Agency may also copy material subject to the usual conditions.

For all other use, permission should be sought from Cambridge or from the American Branch of Cambridge University Press.

#### INSTRUCTIONS FOR CONTRIBUTORS

Instructions for Contributors will be found on the Journal's webpage at www.cambridge.org/nle This journal and other journals are included in the Cambridge Journals Online service which can be found at

#### © Cambridge University Press 2017

journals.cambridge.org

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, non-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

## NATURAL LANGUAGE ENGINEERING

### Volume 23 Part 4 July 2017

#### CONTENTS

#### One, no one and one hundred thousand events: Defining and processing events in an inter-disciplinary perspective 485 R. Sprugnoli and S. Tonelli A transformation-driven approach for recognizing textual entailment 507 Roberto Zanoli and Silvia Colombo Sentiment analysis in Turkish at different granularity levels 535 Rahim Dehkharghani, Berrin Yanikoglu, Yucel Saygin and Kemal Oflazer Citation function, polarity and influence classification 561 Myriam Hernández-Alvarez, José M. Gomez Soriano, and Patricio Martínez-Barco Detecting sexual predators in chats using behavioral features and imbalanced learning 589 Claudia Cardei and Traian Rebedea Find the errors, get the better: Enhancing machine translation via word confidence estimation 617 Ngoc-Quang Luong, Laurent Besacier and Benjamin Lecouteux Industry watch The commercial NLP landscape in 2017 641 *Robert Dale*

The cover illustration is computer generated from an engraving of the Tower of Babel in an eighteenth-century bible.

Cambridge Journals Online For further information about this journal please go to the journal website at: cambridge.org/nle

https://doi.org/10.1017/S1351324917000225 Published online by Cambridge University Press

ARTICLES



MIX Paper from responsible sources FSC<sup>®</sup> C007785

